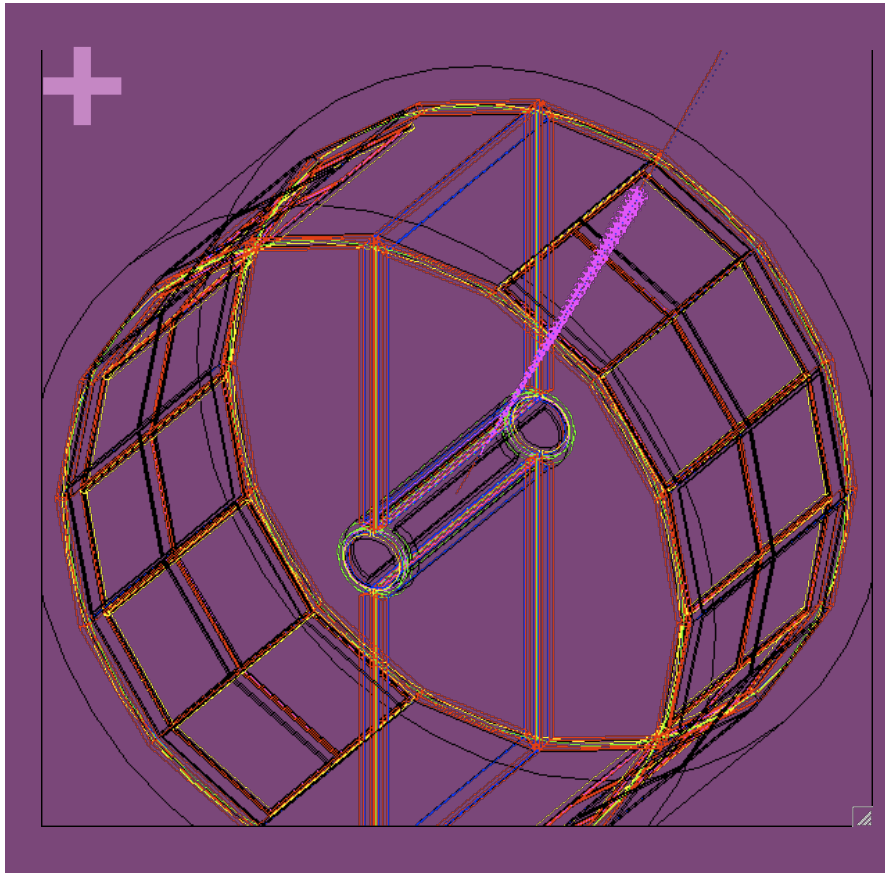
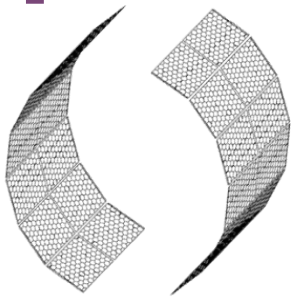
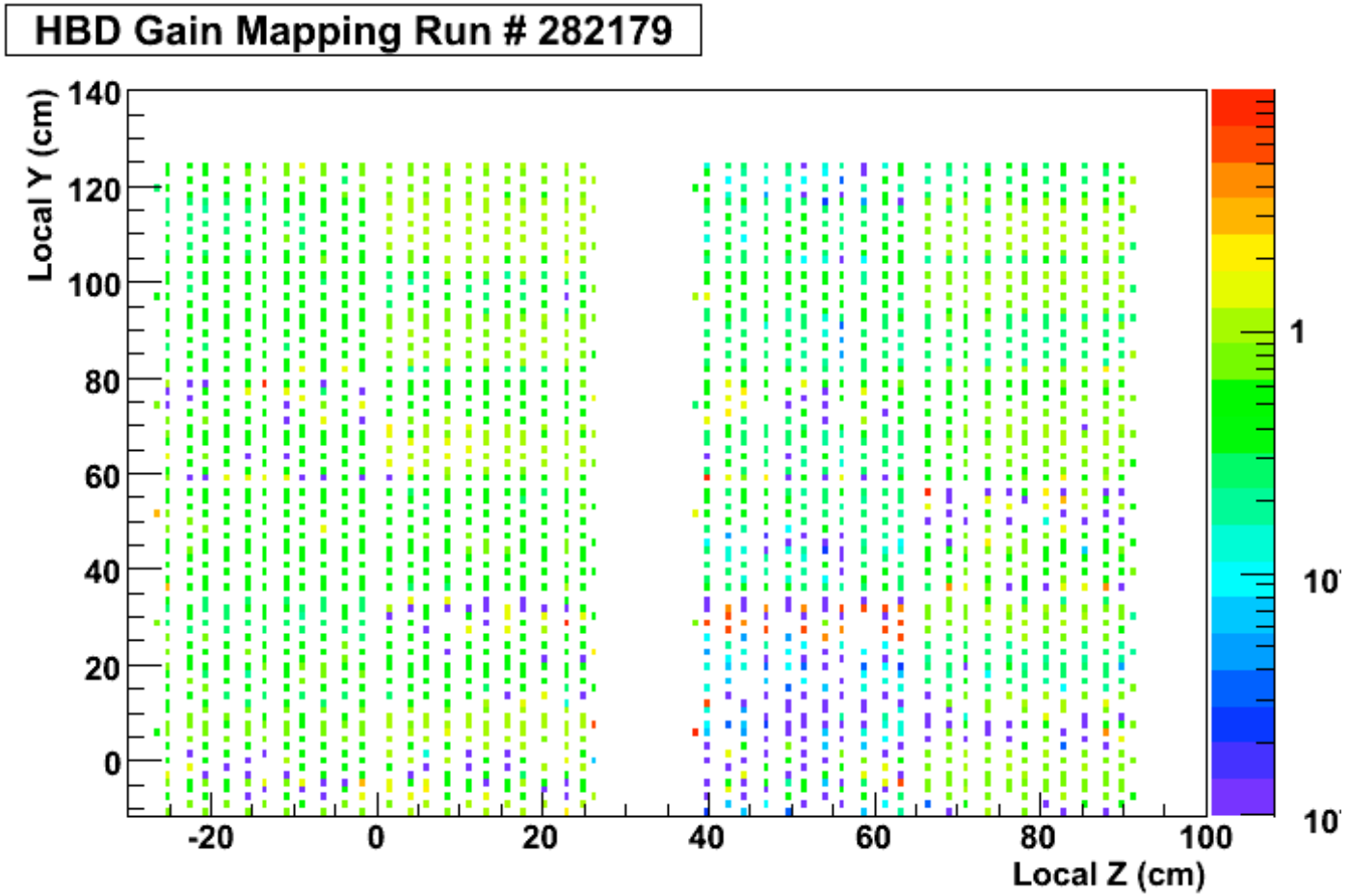


Hbd Software Update

By Sky Rolnick
8/25/09
Hbd Group Meeting



Hbd Gain Factors



Hub n Spoke Update

(Several modifications since last time)

- Applied the dphi and dz corrections from Ilia to get better track matching.
- Changed sorting routine for three tuple to search only neighboring pads instead of all 192 pads.
- Was getting cases with charge in hub was same as charge in spoke resulting in unrealistic correlations. These were due to overlapping pads which is now fixed.
- Around boundaries we sometimes get three-tuples with irregular shapes due to FindNearestPad routine. Implemented new method to force these to have correct shape.
- Center of gravity computed for hub only and not spoke. If no charge in hub, use cog of spoke. Still allows flexibility since matching is not perfect.
- Computing swapped variables for clusters. Should swapped vars be computed using phtrackback or simply swap x and look for cluster in swapped arm? Does it matter?
- PHCentralTrackV24 has no member variable for swapped charge. Should there be?

Hub n Spoke Update

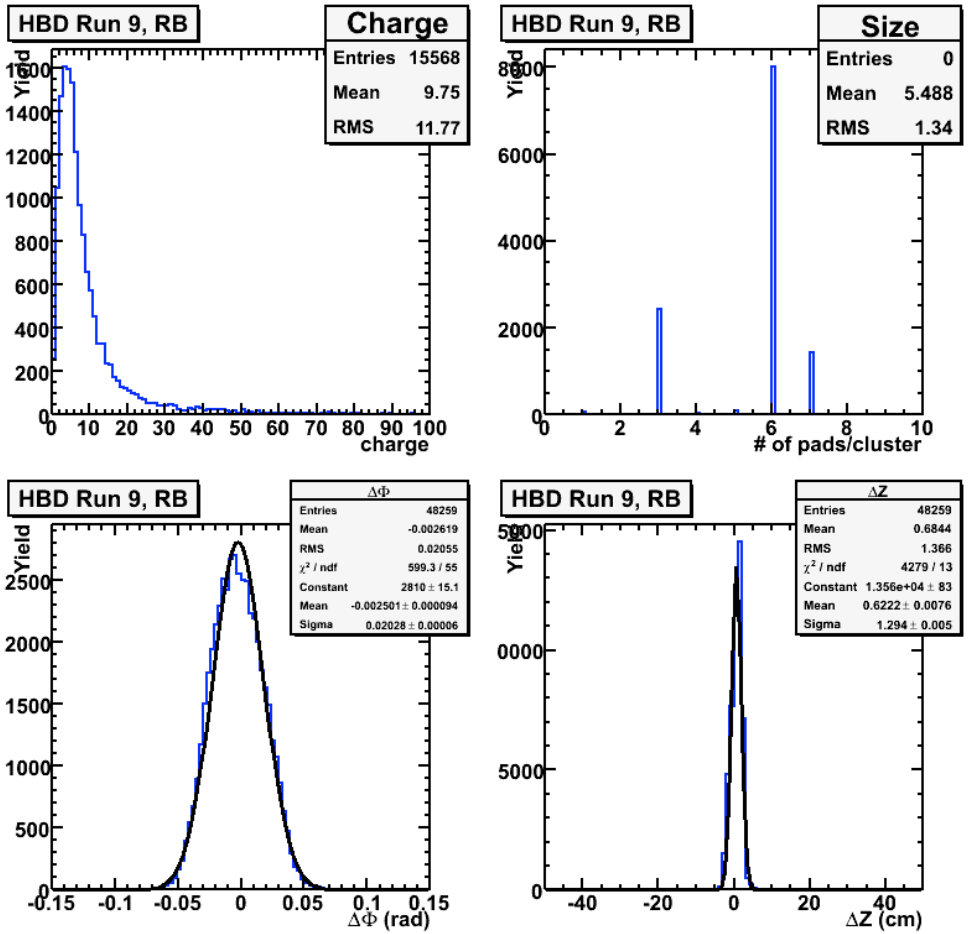
(Several modifications since last time)

- Latest version in cvs still has memory leaks.
- I've identified some memory leaks but not all of them.
- One place this occurs is in sort, since sort calls Clone which implicitly calls "new".
- Changed this to use stl sort instead. Funny message if this is in header file I get <unresolved overloaded function type>, but not an issue if defined in my class file?
- Have issues with delete since I have vectors of pointers. When I delete hub & spoke I get

  *** glibc detected *** double free or corruption (fasttop): 0x0ae27000 ***

- When I don't delete, I get memory leaks!

Track Matching with HnS (much improved over last time)



$\sigma(\Delta z)$~1.24cm

$\sigma(\Delta \phi)$~0.02 rad

Still some peculiarities in the matching ie. sometimes hub not centered at blob center.

Cluster size of 3 means it found a hub but no spoke.

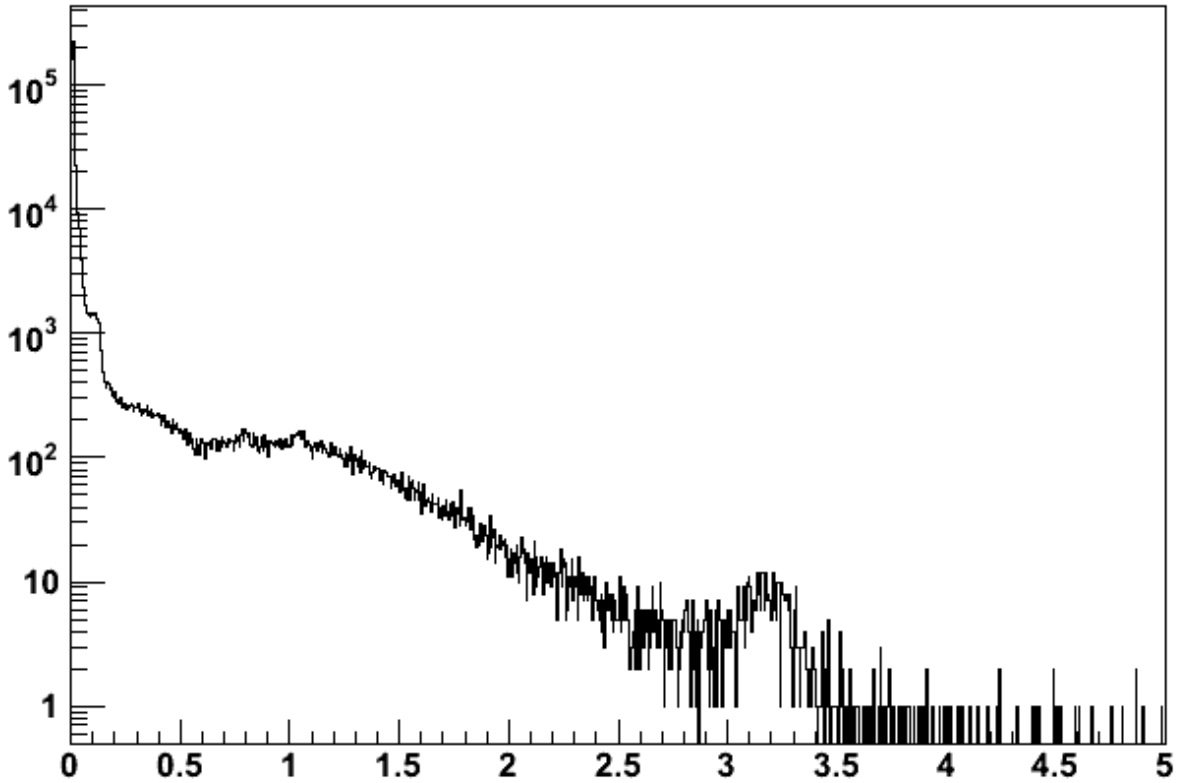
Cluster size of 6 means both hub and spoke were found.

Other sizes occur at boundaries where it picks up spare cells.

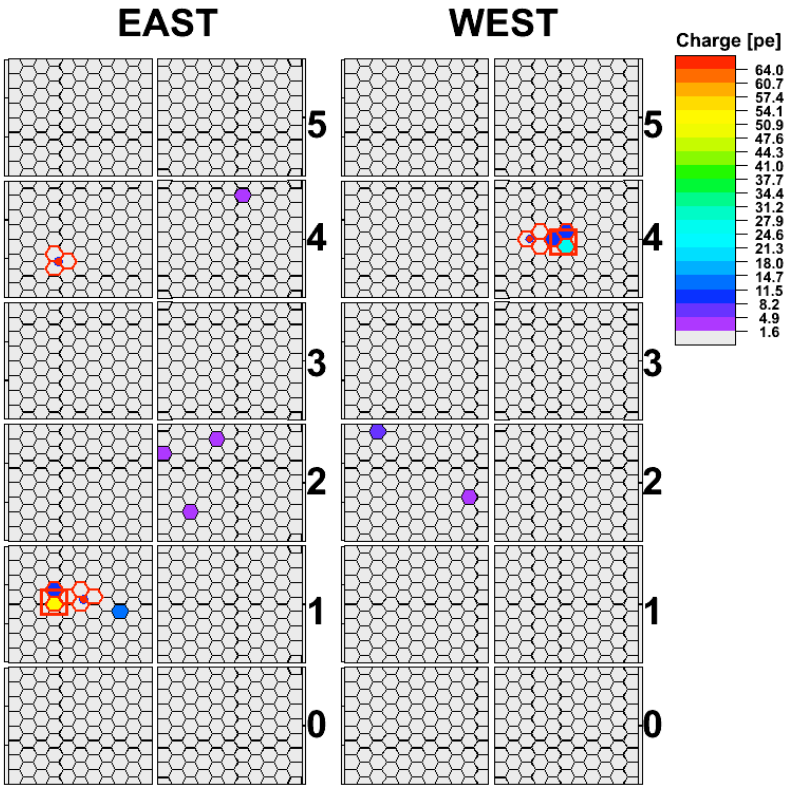
Modifications to PairObj

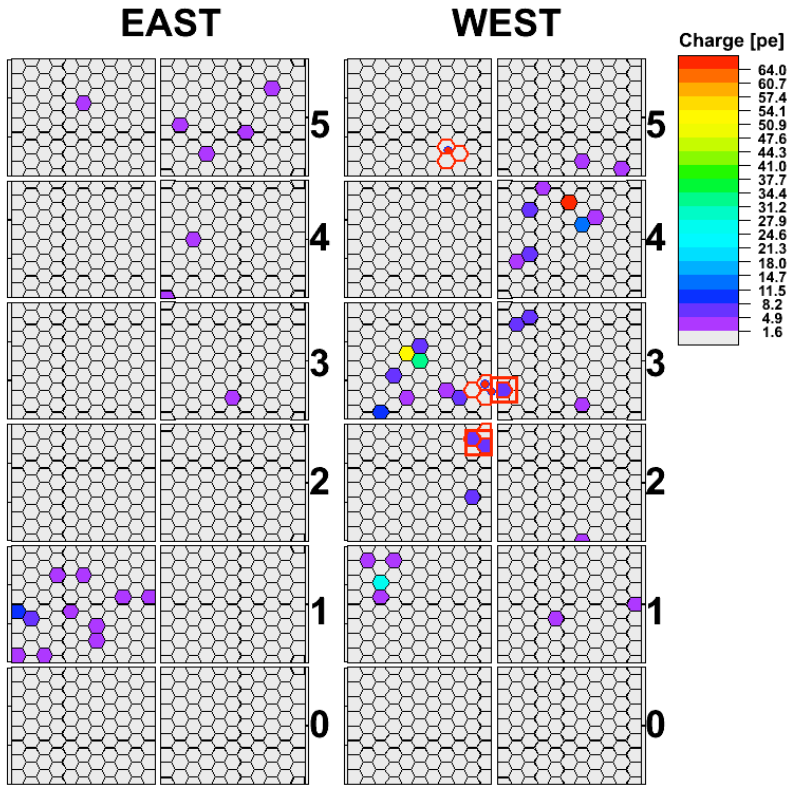
- Implemented new version of PairObj_eev5.
- Allows PairObj to store hub n spoke variables.
- Works on production, but beware of library dependencies.
- Had to compile offline/packages/lvl2 for some reason in order to

Mass Spectra for Run9 pp sqrt(s)=200GeV

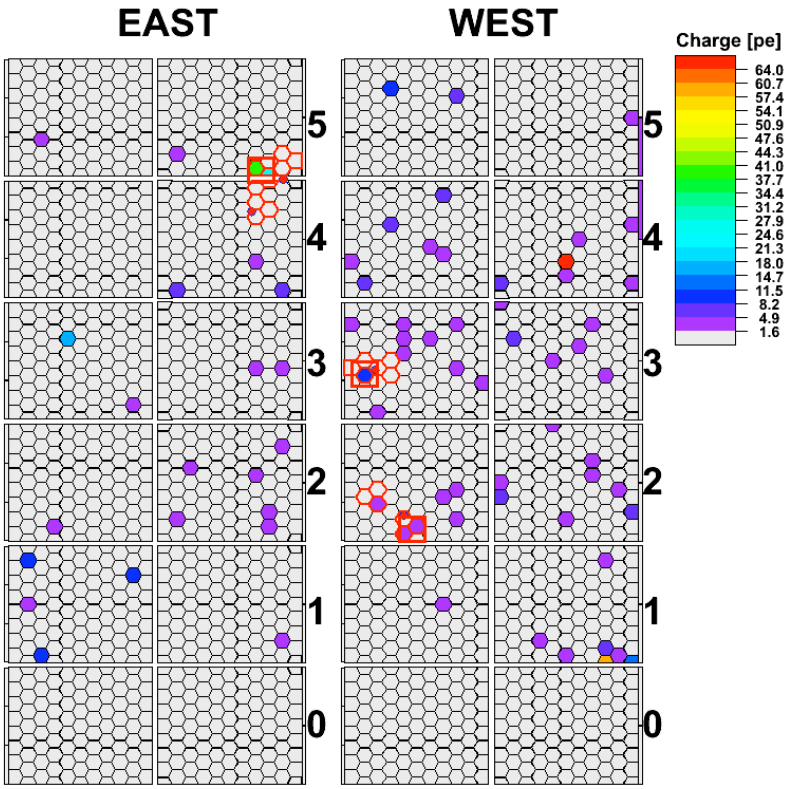


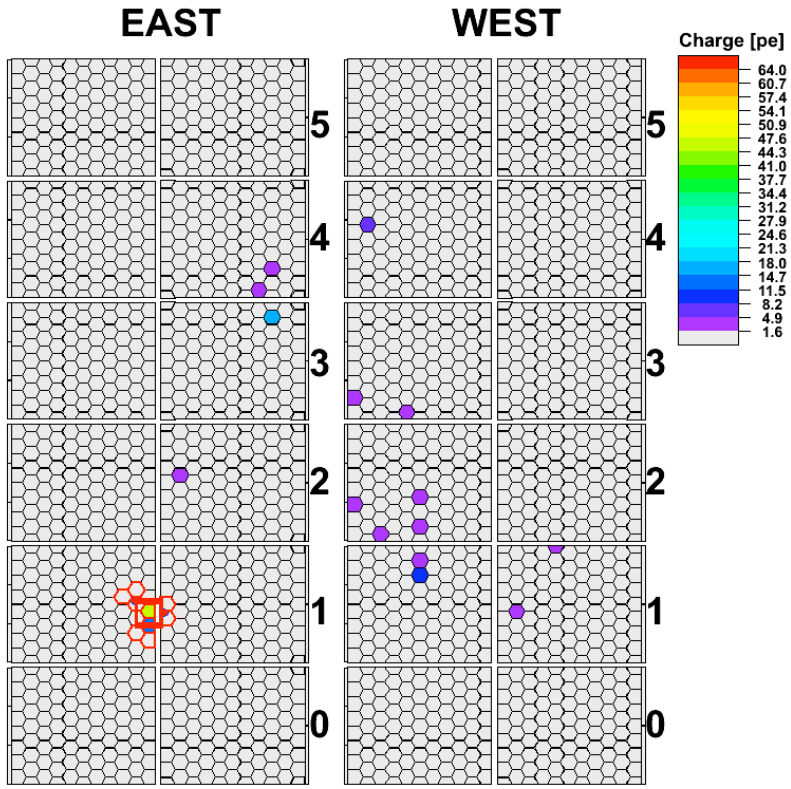
HnS Event Display



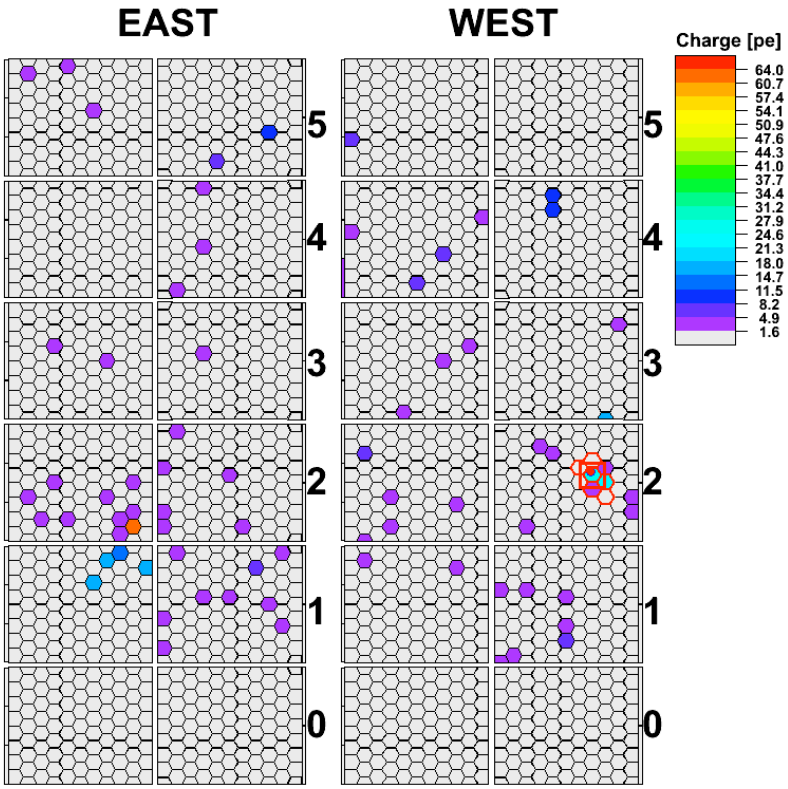


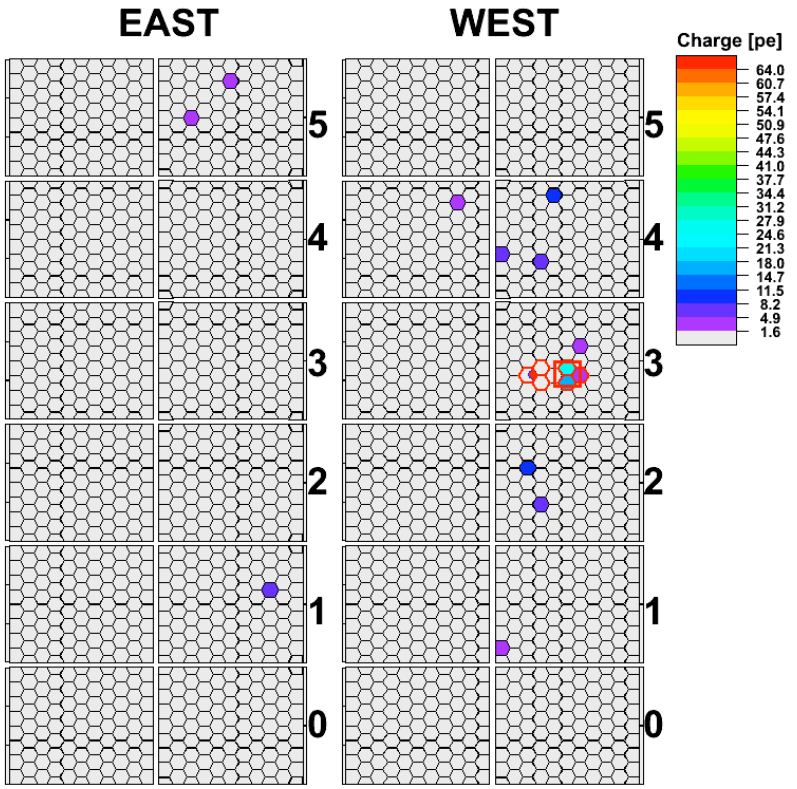
HnS Event Display



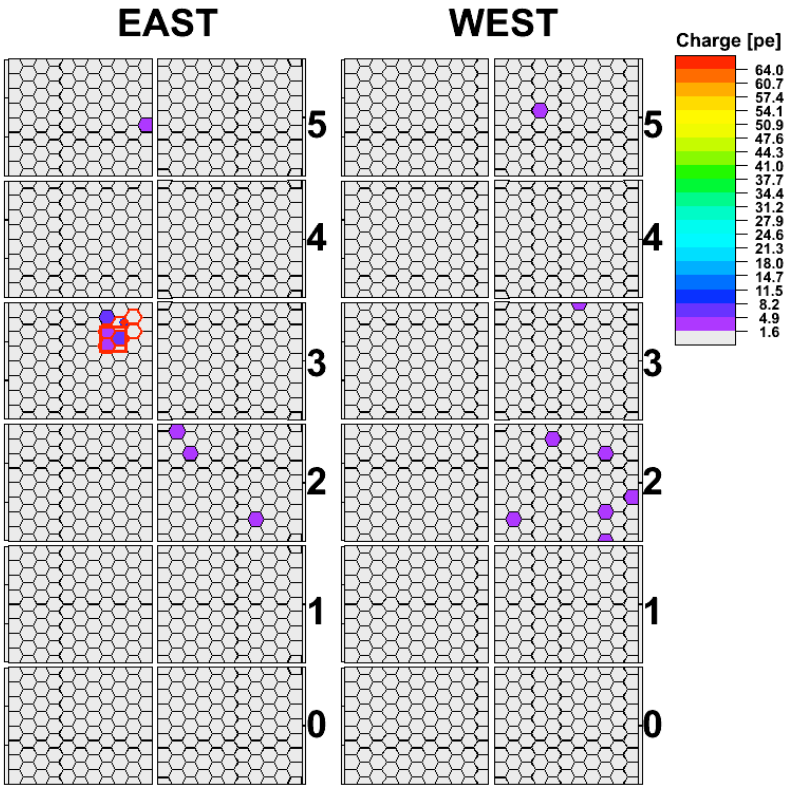


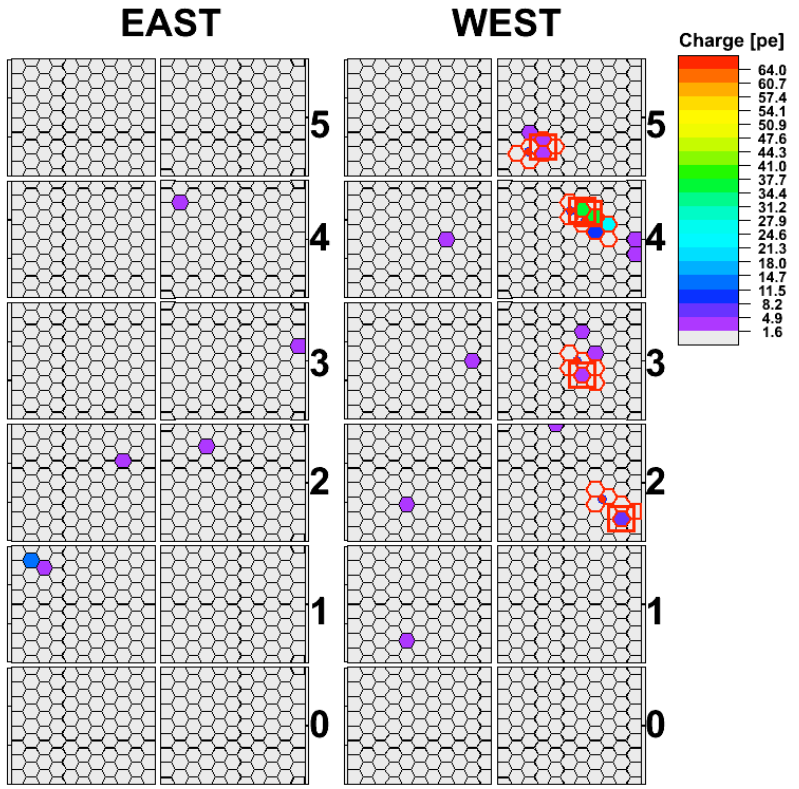
HnS Event Display



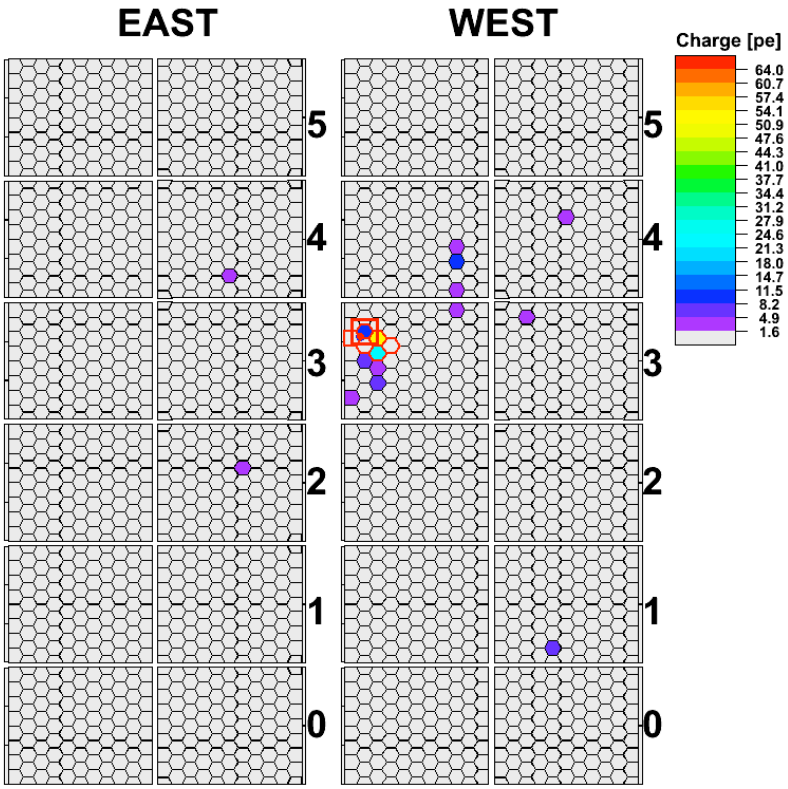


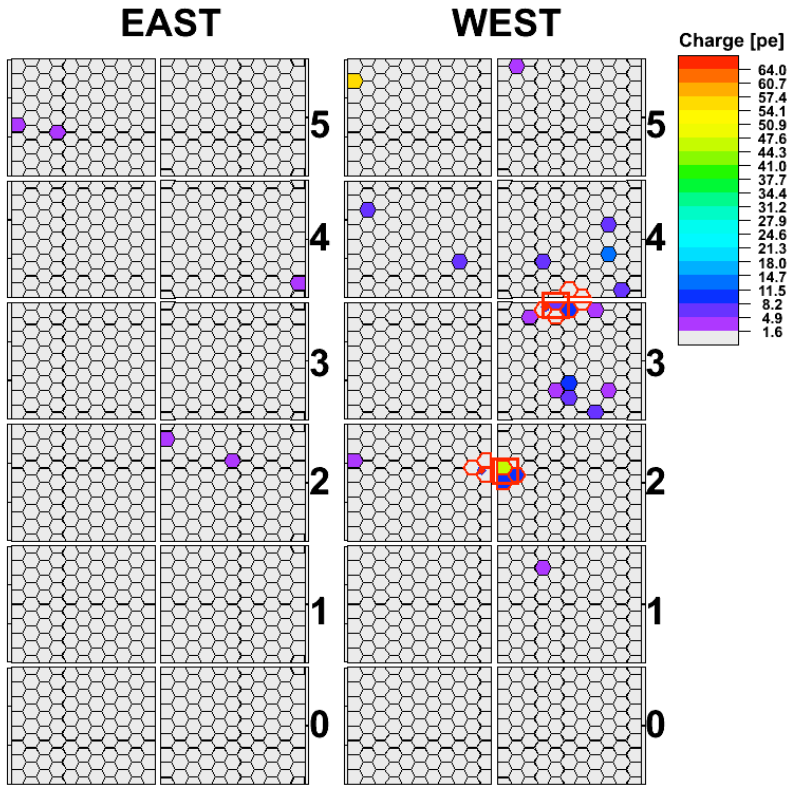
HnS Event Display





HnS Event Display

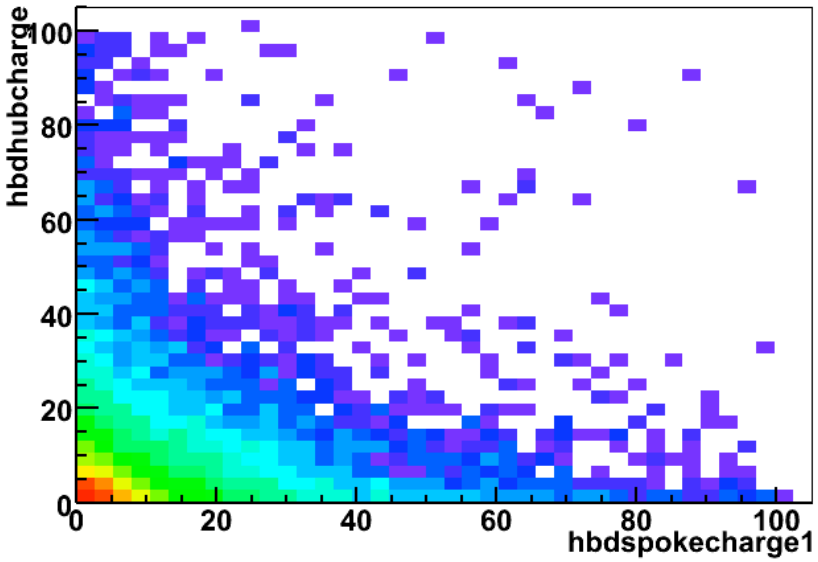




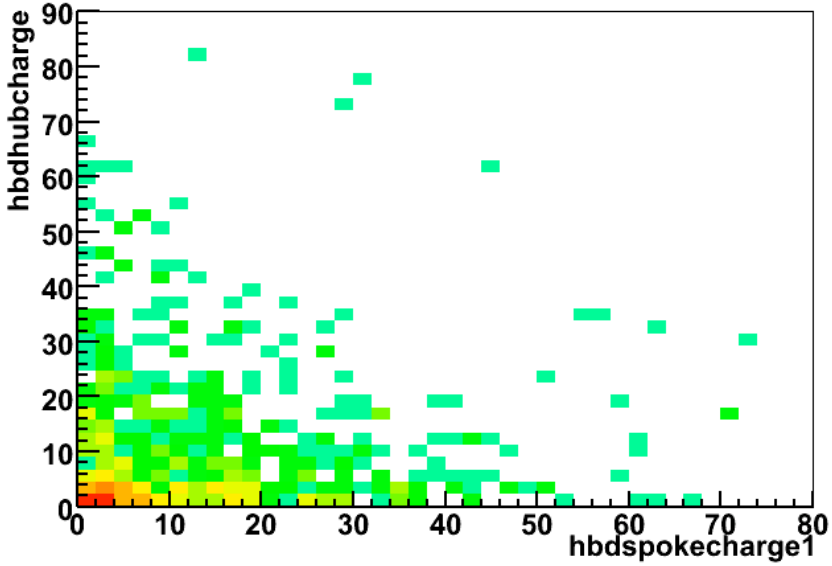
More events stored in my draft area WWW/p/draft/skymeson/hns_display

Hub n Spoke

Minbias Data

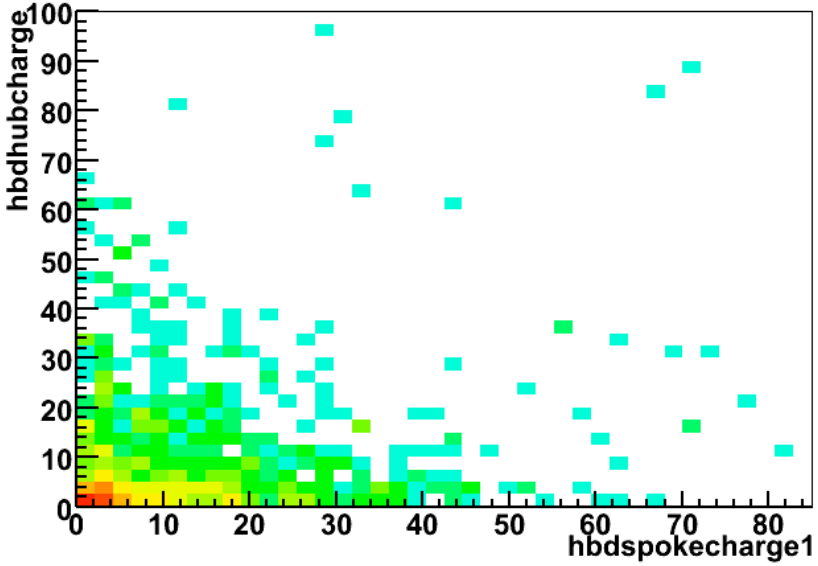


Using minbias data without cuts.
For all tracks including hadrons

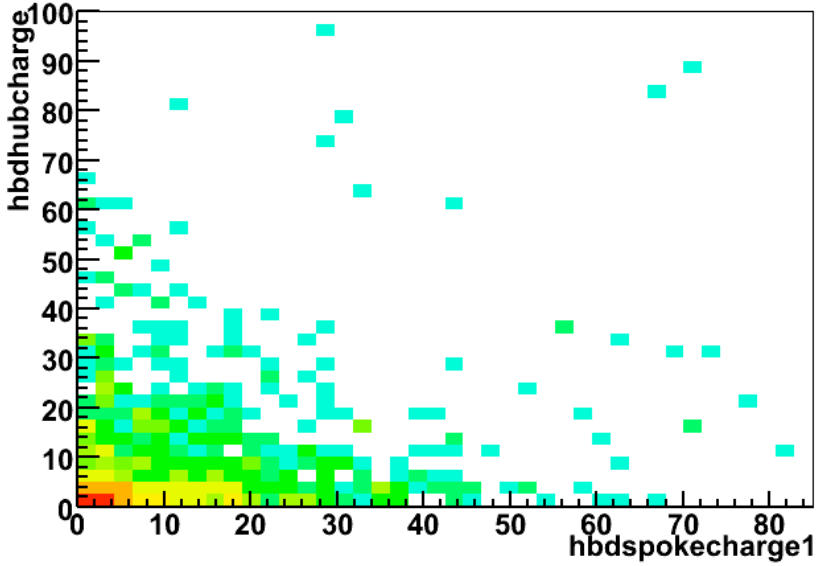


Using minbias data with n0 >0 cut.
Using a eovp > 1cut.

Hub n Spoke

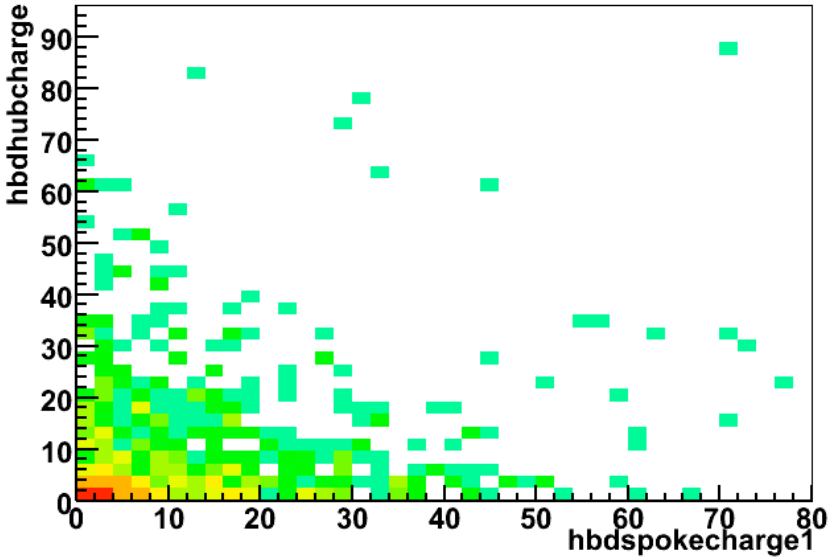


Using minbias data n0 > 0 cut.

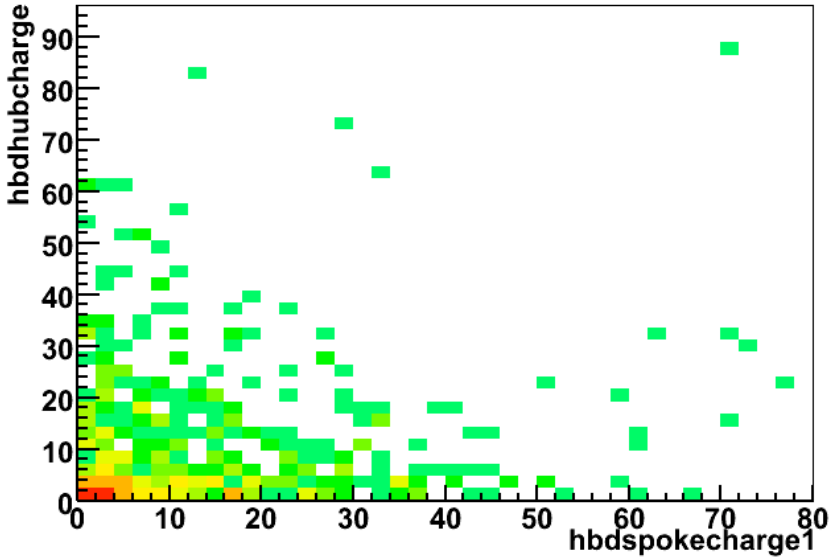


Using minbias data with n0 >1 cut.

Hub n Spoke

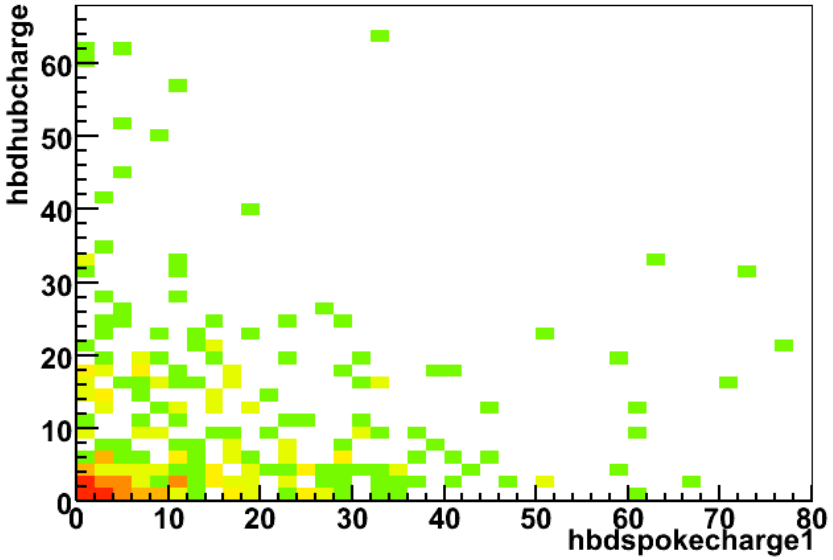


Using minbias data n0 > 2 cut.



Using minbias data with n0 >3 cut.

Hub n Spoke



Using minbias data n0 > 4 cut.

Performance in Higher Occupancy

The End ….